Does Knowledge Sharing Really Increase Knowledge?

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ABSTRACT

Knowledge is vital resource in the organizations in this era. Knowledge sharing is one of the mechanisms used by organizations to capture, disseminate, transfer and apply knowledge usefully. This study is done to examine if the specific type of knowledge gives significant impact to knowledge sharing practices among business faculty members in the universities. A questionnaire was distributed to respondents and data gathered was analyzed using factoring analysis and logistic regression. Study shows that only explicit knowledge give significant positive impact to the sharing of knowledge among the faculty members.

Keywords

Knowledge sharing, explicit knowledge

1.0 INTRODUCTION

Organizational performance can be improved by providing useful and relevant knowledge to employees (Alavi & Leidner, 2001; Hansen, Nohria, & Tierney, 1999). Knowledge is recognized as the most important resource in organization (Nahapiet & Ghoshal, 1998; Spender & Grant, 1996). It is considered as the primary source of competitive advantage (Stewart, 1997) and critical to the long term sustainability and success of organization (Nonaka & Takeuchi, 1995).

According to knowledge-based view of the firm, organizations need to have the ability to integrate tacit knowledge embedded in the minds of individuals in order for them to survive and sustain competitive advantage (Barnett & Hansen, 1996; Grant, 1996; Nonaka, 1994)

Leadbeater (2000) framed the value of knowledge into four major ways:

- extraordinary leverage and increasing returns;
- an efficient and effective re-creation of knowledge can represent a substantial source of competitive advantage;
- uncertain value - knowledge investment value is often difficult to estimate in terms of future discounted cash flows, and
- uncertain value sharing - company may not benefit from knowledge investments because knowledge is embedded in people's mind

Rodgers (2003) found that knowledge must be reconceptualized and quantified as a basis of information related to organization performance.

The acknowledgement of knowledge as the key resource of today's organization affirms the need for processes that facilitate the creation, sharing and leveraging of individual and collective knowledge (Becerra-Fernandez & Sabherwal, 2001).

The key to successfully managing knowledge is now being seen as dependent on the connection between individuals within the organization (Brown & Duguid, 1991). Individuals in organization have always created and shared knowledge. Therefore knowledge sharing has been considered to be a normal function in organization.

The focus of this study is to examine the influence factor that exists with and within faculty members in the process of knowledge sharing between individuals. The purpose of this article is to also examine if the specific type of knowledge has significant impact to knowledge sharing practices among faculty members in private and public Higher Institutions Education (HIEs) in Malaysia.

2.0 LITERATURE REVIEW

According to Pan and Scarbrough "Explicit is systematic and easily communicated in the form of hard data or codified procedures. It can be articulated in formal language including grammatical statements. This kind of knowledge can thus be transmitted across individuals formally and easily. Tacit knowledge is not available as a text and may conveniently be regarded as residing in the heads of those working in a particular organisational context. It involves intangible factors embedded in personal beliefs, experiences, and values." (1999 p 362)

There are three basic processes of knowledge management namely, knowledge acquisition, knowledge sharing and knowledge utilization. Knowledge acquisition is the process of development and creation of insights, skills and relationships while knowledge sharing is the act of disseminating and making available knowledge that is already known, and knowledge utilization is where learning is integrated into the organization (Tiwana, 2002).

Knowledge sharing can be a medium to encourage knowledge exchange and creation in the organizations in order to recognize their competitive advantages (Liebowitz, 2001).

Employees need to understand how to access and work with information and knowledge, share it and create conditions on how to use it. The understanding of information and knowledge will become a source of intellectual capital through its expression in goods and services.

In order to maximimize the sharing and communication of knowledge, companies need to consider several organizational dimensions such as information technology, organization structure, organizational culture and reward systems (Liebowitz & Beckman, 1998).

Knowledge sharing success does not depend on technology alone but it is also related to behavioral factors (Calantone, Cavusgil, & Zhao, 2002; Kidwell, Mossholder, & Bennett, 1997; Liao, Chang, Cheng, & Kuo, 2004; Walsham, 2002). An innovative culture, a capacity to learn from failure and good information quality are factors for successful knowledge sharing in public service organizations (Taylor & Wright, 2004).

A study on knowledge sharing practices was carried out at national car industry Malaysia; the researchers found that immediate supervisors and employees' attitude are the main contributors to successful knowledge sharing besides organizational culture and work group support (Heng et al., 2005). The researchers found that all the four factors are positively correlated to knowledge sharing.

The previous literature did not show if the implementation of knowledge sharing would be beneficial to the employees and organization in knowledge enhancement and did not specifically point out the factor that would influence such increase. Therefore, this research is intended to fill the gap in this area.

3.0 METHODOLOGY

A cross-sectional survey is used as a method to collect data from Business Management faculty members. The methodology of research employed was through survey questionnaires. Statistical data and reports were also obtained from the HIEs as a source of secondary data to complement the findings of the survey.

Four factors of knowledge sharing for this study were adapted from Ipe (2003), who proposed a conceptual framework for knowledge sharing in organizations. The factors are nature of knowledge, working culture, motivation to share and opportunities to share. Factor on staff's attitude was adapted from Heng et al. (2005). The focus of this study is on knowledge sharing between Economics and Business Management faculty members in HIEs.

A list of variables was given to the respondents and they were asked to indicate their level of agreement based on Likert-scale, with the following representation of level of agreement; '1' indicates 'strongly agree'; '2' indicates 'agree'; '3' indicates 'neutral'; '4' indicates 'disagree' and '5' indicates 'strongly disagree'.

Exploratory factor analysis (EFA) seeks to uncover the underlying structure of a relatively large set of variables. The researcher's *à priori* assumption is that any indicator may be associated with any factor. This is the most common form of factor analysis. There is no prior theory and one uses factor loadings to intuit the factor structure of the data. The main applications of factor analytic techniques are: (1) to *reduce* the number of variables and (2) to *detect structure* in the relationships between variables, that is to *classify variables*. Therefore, factor analysis is applied as a data reduction or structure detection

method (the term *factor analysis* was first introduced by Thurstone, 1931). Factor analysis is a correlation technique to determine meaningful clusters of shared variance. Factor analysis begins with a large number of variables and then tries to reduce the interrelationships amongst the variables to a few numbers of clusters or factors. Factor analysis finds relationships or natural connections where variables are maximally correlated with one another and minimally correlated with other variables and then groups the variables accordingly. After this process has been done many times a pattern appears of relationships or factors that capture the essence of all of the data emerges. Therefore factor analysis refers to a collection of statistical methods for reducing correlational data into a smaller number of dimensions or factors

Logistic regression is a form of regression which is used when the dependent is a dichotomy and the independents are of any type (Alan Agresti, 1996). Continuous variables are not used as dependents in logistic regression. Unlike logit regression, there can be only one dependent variable. Logistic regression can be used to predict a dependent variable on the basis of continuous and/or categorical independents and to determine the percent of variance in the dependent variable explained by the independents; to rank the relative importance of independents; to assess interaction effects; and to understand the impact of covariate control variables.

Logistic regression applies maximum likelihood estimation after transforming the dependent into a logit variable (the natural log of the odds of the dependent occurring or not). In this way, logistic regression estimates the probability of a certain event occurring (Imam Ghozali, 2006). Logistic regression has many analogies to OLS regression: logit coefficients correspond to b coefficients in the logistic regression equation, the standardized logit coefficients correspond to beta weights, and a pseudo R^2 statistic is available to summarize the strength of the relationship. Unlike OLS regression, however, logistic regression does not assume linearity of relationship between the independent variables and the dependent, does not require normally distributed variables.

Press et al (1978) make the case for the superiority of logistic regression for situations where the assumptions of multivariate normality are not met a compared to multiple discriminant. They conclude that logistic and discriminant analyses will usually yield the same conclusions, except in the case when there are independents which result in predictions very close to 0 and 1 in logistic analysis (Press, S. J. and S. Wilson, 1978). Logistic regression also does not assume homoscedasticity, and in general has less stringent requirements. It does, however, require that observations are independent and that the independent variables be linearly related to the logit of the dependent.

The success of the logistic regression can be assessed by looking at the classification table, showing correct and incorrect classifications of the dichotomous, ordinal, or polytomous dependent. Also, goodness-of-fit tests such as model chi-square are available as indicators of model appropriateness as is the Wald statistic to test the significance of individual independent variables.

Ho = There is no relationship between the importance of knowledge sharing and independent variables (factoring groups)
H1 = There are relationships between the importance of knowledge sharing and independent variables (factoring groups)

4.0 FINDINGS

4.1 Reliability Test

Reliability test is conducted using Cronbach Alpha. Using reliability analysis, the questionnaire can be determined the extent to which they are related to each other. The overall index of the repeatability or internal consistency of the scale as a whole would be generated and identification of problem items that should be excluded from the scale would be generated too.

Table 4.1.1: Reliability Test Using Cronbach Alpha

Reliability Coefficients
N of Cases = 49
N of Items = 27
Alpha = .8631

The Reliability Test for the questionnaires as shown in the table above measures the Cronbach's Alpha is 0.8631. Therefore the Cronbach's Alpha is showing internal inconsistency and therefore reliable because it is higher than 0.70 (Nunnally, 1970).

4.2 Section B: Respondents' Demographic Profiles

Table 4.2.1: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
male	20	40.8	40.8	40.8
female	29	59.2	59.2	100.0
Total	49	100.0	100.0	

Table 4.2.2: Race

	Frequency	Percent	Valid Percent	Cumulative Percent
Malay	40	81.6	81.6	81.6
Chinese	3	6.1	6.1	87.8
Indian	1	2.0	2.0	89.8
Others	5	10.2	10.2	100.0
Total	49	100.0	100.0	

Table 4.2.3: Age

	Frequency	Percent	Valid Percent	Cumulative Percent
22-25	1	2.0	2.0	2.0
26-30	17	34.7	34.7	36.7
31-35	16	32.7	32.7	69.4

36-40	9	18.4	18.4	87.8
>40	6	12.2	12.2	100.0
Total	49	100.0	100.0	

Table 4.2.4: Qualification

	Frequency	Percent	Valid Percent	Cumulative Percent
PhD	3	6.1	6.1	6.1
Master	42	85.7	85.7	91.8
Bachelor	4	8.2	8.2	100.0
Total	49	100.0	100.0	

Table 4.2.5: Area of Specialization

	Frequency	Percent	Valid Percent	Cumulative Percent
Business	2	4.1	4.1	4.1
Management	3	6.1	6.1	10.2
HRM	2	4.1	4.1	14.3
Marketing	6	12.2	12.2	26.5
Entrepreneurship	10	20.4	20.4	46.9
Finance	3	6.1	6.1	53.1
Accounting	10	20.4	20.4	73.5
Economics	5	10.2	10.2	83.7
Language	5	10.2	10.2	93.9
Other	3	6.1	6.1	100.0
Total	49	100.0	100.0	

Table 4.2.6: Working experience

	Frequency	Percent	Valid Percent	Cumulative Percent
0-4	15	30.6	30.6	30.6
5-9	18	36.7	36.7	67.3
10-14	10	20.4	20.4	87.8
15-19	3	6.1	6.1	93.9
>20	3	6.1	6.1	100.0
Total	49	100.0	100.0	

Demographics profile are categorized into gender, race, age, qualification, area of specialization and working experience.Based on gender profile, 41% of respondents are male and 52% are female. Majority of the respondents are Malays (table 4.2.2) and based on table 4.2.3 their age range varies and majorities are at the range of 26-30 (34.7%) and 31-35 (32.7%). Most of the respondents have master degree (table 4.2.4). Specializations also varies but two highest are entrepreneurship and accounting 9table 4.2.5). Two third of them have below than 9 years of working experience (table 4.2.6).

4.3 Factor Analysis

Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables. Factor analysis can also be used to generate hypotheses regarding causal mechanisms or to screen variables for subsequent analysis (for example, to identify co-linearity prior to performing a linear regression analysis). In this analysis, the factor analysis procedure using the varimax rotation would be used in order to identify the questions that could be grouped together which increase the staff knowledge. Furthermore, the reduction of data or uncorrelated questions would reduce the variables used in future analysis.

Table 4.3.1: KMO and Bartlett's Test

KMO Measure of Sampling Adequacy.		.575
Bartlett's Test of Sphericity	Approx. Chi-Square	542.629
	df	231
	Sig.	.000

The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) test shows that the factor analysis could be done because it is more than 0.5. Therefore no variables would be excluded. In addition the Bartlett's test of Sphericity is significant at 0.000 therefore we conclude that the factor analysis could be further analyzed.

Table 4.3.2: Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Cpnt	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.734	26.065	26.065	5.734	26.065	26.065	3.151	14.325	14.33
2	2.974	13.516	39.581	2.974	13.516	39.581	3.120	14.182	28.51
3	1.978	8.991	48.573	1.978	8.991	48.573	2.574	11.699	40.21
4	1.738	7.900	56.473	1.738	7.900	56.473	2.476	11.256	51.46
5	1.654	7.517	63.990	1.654	7.517	63.990	2.078	9.447	60.91
6	1.175	5.341	69.331	1.175	5.341	69.331	1.853	8.422	69.33
7	.989	4.497	73.828						
8	.906	4.117	77.946						
9	.796	3.619	81.564						
10	.623	2.830	84.394						
11	.531	2.414	86.808						
12	.502	2.282	89.090						
13	.447	2.030	91.120						
14	.381	1.733	92.853						
15	.329	1.496	94.349						
16	.321	1.460	95.808						
17	.261	1.187	96.995						
18	.224	1.018	98.013						
19	.184	.836	98.850						
20	.131	.595	99.445						
21	7.472E-02	.340	99.784						
22	4.749E-02	.216	100.000						

Extraction Method: Principal Component Analysis.

Based on the total variance, there are 6 factors were extracted because the eigenvalues is higher than 1 for the respective factors. Based on the extraction it is noted that factor 1 could explain (14.33%), factor 2 (14.18%), factor 3 (11.7%), factor 4 (11.26%), factor 5 (9.45%), and factor 6 (8.42%), The total 6 factors could only explain 69.33% of the total variations.

Based on the varimax rotated components, the factors could be extracted to 6 factors based on the factor loadings which are higher than 0.5 with the subheadings as listed below.

Factor 1	Knowledge Sharing in Organization
Factor 2	Explicit Knowledge
Factor 3	Knowledge Sharing Enhance Relationship among staff
Factor 4	Motivation to Share

Factor 5	Knowledge Sharing and Innovation
Factor 6	Tacit Knowledge

From the factor analysis there are 6 factors that could influence the increase of staff knowledge.

4.4 Logistic Regression for Knowledge Sharing

This analysis is conducted to identify the factors which are important in the increase of knowledge using logistic regression. The consumers who believe that their knowledge has increased will be categorized as 1 and the consumers who believe that their knowledge has not increased will be categorized as 0.

Table 4.4.1: The Increase of Knowledge

		Predicted dff		
Observed		.00	1.00	Percentage Correct
dff	.00	8	1	88.9
	1.00	1	39	97.5
Overall %				95.9

a The cut value is .500

Based on the classification 2 X 2 table, it shows the correct and incorrect estimation value. Based on the above table it is noted that 9 respondents who believe that knowledge sharing did not increase their knowledge in the observation but in the prediction there are only 8 respondents. Therefore the accuracy of the classification is about 88.9%. In contrary, there are 40 respondents who believe that knowledge sharing has increased their knowledge in the observation but there are only 39 respondents in the prediction. Therefore the accuracy is about 97.5%. The overall accuracy for both is approximately 95.9%.

Table 4.4.2 Variables in the Equation of the Increase of Knowledge From Knowledge Sharing

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	FAC2_2	4.576	1.768	6.697	1	.010	97.155
	Constant	3.624	1.303	7.741	1	.005	37.490

a Variable(s) entered on step 1: FAC2_2.

Based on the above logistic regression result, it could be concluded that the factors influence the increase of knowledge could be given by the following logistic model. There is only independent variable that is significant in influencing the increase of knowledge:

$$\text{Ln } p/1\text{-}p = 3.624 + 4.567 \text{ (Explicit Knowledge)*}$$

Or

$$p/1\text{-}p = e^{3624} + 4.567 \text{ (Explicit Knowledge)*}$$

The factor that significantly contribute positively to the increase of knowledge is explicit knowledge.

5.0 CONCLUSION

There are 6 grouped items which were determined using the factor analysis procedures and those are knowledge sharing in organization, explicit knowledge, knowledge sharing enhance relationship among staff, motivation to share, knowledge sharing and innovation and tacit knowledge. However, only explicit knowledge contributes positively towards the increase of knowledge. This study concludes that the knowledge sharing happens if the information or knowledge is documented explicitly. This is probably because of certain factors like the background of the respondents and the culture of the workplace. Majority of the respondents' age are in the range of 30 to 35 years and because of the limited experiences they are more comfortable sharing knowledge that are already documented rather than speaking out the tacit knowledge they posses. Therefore in ensuring that the knowledge sharing could be practiced thoroughly in the organization all tacit knowledge should also be documented so that the knowledge could be shared among each other. By its nature, tacit knowledge is difficult to convert into explicit knowledge. Through conceptualization, elicitation, and ultimately articulation, typically in collaboration with others, some proportion of a person's tacit knowledge may be captured in explicit form. Typical activities in which the conversion takes place are in dialog among team members, in responding to questions, or through the elicitation of stories.

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